REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-19 are presently active in this case, Claims 4 and 6 having been amended by way of the present Amendment. Claims 9-14 and 19 have been allowed.

Claims 4 and 6 were indicated as being allowable if rewritten in independent form. Accordingly, Claims 4 and 6 have been rewritten in independent form, and therefore are considered to be in condition for allowance.

In the outstanding Official Action, Claims 1-3, 5, 7, 8, and 15-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (U.S. Patent No. 5,642,056) in view of Rath (U.S. 4,758,785). For the reasons discussed below, the Applicants traverse the obviousness rejection.

The basic requirements for establishing a *prima facie* case of obviousness as set forth in MPEP 2143 include (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the reference (or references when combined) must teach or suggest all of the claim limitations.

The Applicant submits that a *prima facie* case of obviousness has not been established in the present case because (1) the references do not teach or suggest, either singularly or in combination, all of the claim limitations, and (2) there is no suggestion or motivation to modify or combine the references. The Applicants submit that the Nakajima et al. and Rath references do not disclose all of the limitations recited in independent Claims 1, 5, 15, and 16. For example, the references do not disclose a probing method comprising the step of

"overdriving the main chuck toward the probe card while measuring a load applied to the object of inspection by contact with the probes and controlling the movement of the main chuck in accordance with the measured load," as recited in Claim 1 of the present application. Additionally, the references do not disclose a probing method comprising the steps of "overdriving the main chuck toward the probe card while measuring a load applied to the object of inspection by contact with the probes by means of a sensor and controlling the movement of the main chuck in accordance with the measured load," as recited in Claim 5. The references do not disclose a probing apparatus comprising "a pressure sensor adapted to measure a load applied to the object of inspection by the probes ...; and a controller for controlling the movement of the main chuck in accordance with ... the load measured by means of the pressure sensor," as recited in Claim 15. And the references do not disclose a probing apparatus comprising "a pressure sensor adapted to measure a load applied to the object of inspection by the probes ...; and a controller for obtaining a distortion of the main chuck in accordance with ... the load measured by means of the pressure sensor," as recited in Claim 16.

The Official Action states that the Nakajima et al. reference describes "overdriving (70) the main chuck (15) toward the probe card (22) and controlling (70) the movement of the main chuck in accordance with the measured load...." The Official Action states that the Nakajima et al. reference does not disclose measuring a load applied to the object of inspection when contacted by the probes by means of a sensor. The Official Action then cites the Rath reference for the teaching of "an apparatus wherein the load applied to the object of inspection (79) by contact with the probes (16) [is measured] by means of a sensor (50)." However, the Applicants submit that the Rath reference does not disclose measuring a load applied to the object of inspection.

The Rath reference describes an apparatus for controlling the pressure exerted on a probe (16) in an integrated circuit testing station. The invention uses a pressure pad (50) positioned directly above the probe (16) which is attached to the support structure using a resilient member (32). Associated with the pad (50) is an electrical contact system connected to the lift system. As the lift system moves the circuit (79) to be tested upward, it contacts the probe (16) which pushes against the pad (50). Movement of the probe (16) and circuit (79) against the pad (50) permits secure engagement of the probe (16) with the circuit (79). As the circuit (79) continues to move upward, the pad (50) is urged upward, causing the electrical contact system to deactivate the lift system before damage to the probe (16) occurs.

Note that the Rath reference is concerned with damage to the probe (16), and accordingly, provides a pressure pad (50) that is located to specifically monitor the pressure on the probe (16). The pressure pad (50) is supported by the support structure (12) and is configured to move in conjunction with the probe (16). The pressure pad (50) of the Rath reference does not measure a load applied to the object of inspection, which is the circuit (79). To the contrary, the pressure pad (50) is described in the Rath reference as sensing pressure placed on the probes (16) by the circuit (79) or other structures, in order to prevent damage to the probes (16) from occurring.

Accordingly, neither reference discloses measuring a load applied to the object of inspection. Therefore, the Applicants submit that a *prima facie* case of obviousness has not been established with respect to Claims 1, 5, 15, and 16 of the present application.

Furthermore, the Applicants submit that there is no motivation to combine the Nakajima et al. reference and the Rath reference, since these references are directed to very different devices that cannot be combined in the manner suggested in the Official Action. The Rath reference describes probes (16) that are polyimide film probes (see column 3, line

60). The sensor (50) described in the Rath reference can only be used together with the polyimide film probes (16). The sensor (50) of the Rath reference cannot be used with the probes described in the Nakajima et al. reference, which are disposed in the central space of the frame-like probe card holder (25). In other words, it is technically impossible to adopt the sensor (50) of the Rath reference in the invention described in the Nakajima et al. reference. Accordingly, the Applicants submit that a *prima facie* case of obviousness has not been established with respect to Claims 1, 5, 15, and 16 of the present application.

The Applicants respectfully submit that the rejection is based on the improper application of hindsight considerations. Recognizing, after the fact, that a modification of the prior art would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight considerations. Simplicity and hindsight are not proper criteria for resolving obviousness. *In re Warner*, 397 F.2d 1011, 154 USPQ 173 (CCPA 1967).

Claim 16 is further allowable based upon the recitation of a controller for obtaining a distortion of the main chuck in accordance with a position where the probe touches the object of inspection and the load measured by means of the pressure sensor, which is not disclosed in either of the cited references.

Claims 2, 3, 7, 8, 17, and 18 are considered allowable for the reasons advanced for Claims 1, 5, 15, and 16 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claims 1, 5, 15, and 16. For example, Claims 3 and 8 recite a novel step of obtaining a distortion of the main chuck in accordance with the measured load and correcting at least one of the dislocations between the object of inspection and the probe in X-, Y-, and θ-directions

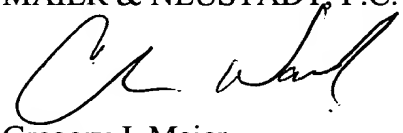
in accordance with the distortion. Furthermore, Claim 18 recites a novel feature of a controller that corrects at least one of dislocations between the object of inspection and the probes in the X-, Y-, and θ-directions in accordance with the distortion.

Accordingly, the Applicants respectfully request the withdrawal of the obviousness rejection.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Christopher D. Ward
Registration No. 41,367

22850
Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/00)

GJM/CDW/brf
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IN THE CLAIMS

4. (Once Amended) A probing method [according to claim 1] comprising steps of:

moving a main chuck to align an object of inspection on the main chuck with probes of a probe card located over the main chuck;

moving the main chuck toward the probe card, thereby bringing electrodes of the object of inspection into contact with the probes;

overdriving the main chuck toward the probe card while measuring a load applied to the object of inspection by contact with the probes and controlling the movement of the main chuck in accordance with the measured load; and

inspecting electrical properties of the object of inspection by means of the probes;

wherein said measurement of the load applied to the object of inspection by contact with the probes includes steps of locating a polishing mechanism right under the probes, the polishing mechanism including a polish plate to be used to polish the tip of the probes; moving the located polishing mechanism toward the probe card, thereby bringing the polish plate into contact with the probes; overdriving the polishing mechanism toward the probe card; and measuring a load applied to the polish plate by the probes by means of a pressure sensor located under the polishing mechanism during the overdrive operation.

6. (Once Amended) A probing method [according to claim 5] comprising steps of:

moving a main chuck in X-, Y-, and θ-directions to align an object of inspection on the main chuck with probes of a probe card located over the main chuck;

moving the main chuck in a Z-direction, thereby brining electrodes of the object of inspection into contact with the probes;

overdriving the main chuck toward the probe card while measuring a load applied the object of inspection by contact with the probes by means of a sensor and controlling the movement of the main chuck in accordance with the measured load; and

inspecting electrical properties of the object of inspection by means of the probes,

wherein said sensor is located on at least one of the lower part of the main chuck and between an LM guide and an XY-stage on which the main chuck is set.